



DuPont Engineering  
Barley Mill Plaza - Bldg. 19  
4417 Lancaster Pike  
Wilmington, DE 19805

September 9, 2005

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Mr. Frank Faranca  
Bureau of Federal Case Management  
NJ Department of Environmental Protection  
401 East State Street  
P.O. Box 028  
Trenton, NJ 08625-0028

Re: Response to NJDEP August 12 letter  
DuPont Chambers Works Facility Sitewide Remedial Strategy  
Salem County, Deepwater, New Jersey

Dear Mr. Faranca:

DuPont has reviewed your August 12, 2005 comment letter regarding the DuPont Chambers Works Facility Sitewide Remedial Strategy. DuPont appreciates the Department's review and discussions during our recent meetings and believes the actions proposed will result in a net environmental benefit. The NJDEP and USEPA Comments are shown below followed by the DuPont response.

**NJDEP and USEPA Comment 1:**

The DuPont Chambers Works Sitewide Strategy is very helpful in moving the project in the right direction. However, it is believed that DuPont must establish its goals and objectives to be effective. A clear distinction between functional and absolute objectives are required and each objective should result in a metric, that we can quantify.

*DuPont Response to Comment 1:*

DuPont believes that development of absolute and functional objectives are necessary in making future remedial decisions. DuPont has begun developing these objectives, which require a number of careful considerations. As a result, DuPont plans to propose the absolute and appropriate functional objectives to the Department within six months of this letter, with additional functional objectives developed as individual areas of the plant are sufficiently characterized. As such, development of these objectives while executing the existing schedule for the site will not affect the near term scopes of work.

The sitewide schedule contained in our July 1 submittal to the Department will be updated to reflect the development of absolute and functional objectives. The revised schedule will be submitted at the agreed interval currently being developed with NJDEP.

**NJDEP and USEPA Comment 2:**

The schedule in Attachment 2 shows that remedies would be selected for RCRA Corrective Action by January 2008. However, remedy selection for the Perimeter Investigations and Interior Area Investigations will not be made until 2009 and 2010 and the Groundwater Monitoring Enhancement and Optimization will continue until 2012. Since RCRA allows 30-year monitoring after the implementation of remedies, the continuation with the Groundwater Monitoring Enhancement and Optimization after the RCRA Corrective Action appears to be consistent with the RCRA. However, all SWMUs and AOCs, including any defined as a result of the Perimeter and Interior Investigations, are also subject to RCRA Corrective Action. DuPont must acknowledge that RCRA Corrective Action includes the entire site and the narrative and schedule should be modified accordingly.

*DuPont Response to Comment 2:*

DuPont acknowledges that any areas defined as a result of the Perimeter and Interior Investigations are subject to Resource Conservation and Recovery Act (RCRA) Corrective Action. The schedule will be modified to indicate continued RCRA Corrective Action subsequent to identification of areas [solid waste management units (SWMUs) and/or areas of concern (AOCs)] under the Perimeter or Interior investigations. The revised schedule will be submitted at the agreed upon interval currently be developed with NJDEP.

**NJDEP and USEPA Comment 3:**

The schedule in Attachment 2 should be detailed enough to contain when CA400 and CA550 will be accomplished. It should also contain a public notice and/or hearing of the proposed selection of site-wide remedies.

*DuPont Response to Comment 3:*

The sitewide schedule will be revised to reflect selection of the remedial actions under CA400 for current SWMUs and will incorporate public notice provisions based on our current understanding of site environmental conditions. Because of the investigation of additional areas of the site and anticipation of extensive bench and pilot tests, we cannot at this time predict the likely remedial action for specific areas. As such, it is not possible to predict attainment of CA550 at this time. As noted in our July 1 2005 sitewide strategy, DuPont will periodically revise the schedule, and future revisions will incorporate prediction of CA550 as appropriate.

**NJDEP and USEPA Comment 4:**

Attachment 1 (Long-Term Remediation), page 2, 2<sup>nd</sup> paragraph. It was stated, "DuPont will follow a systematic process of source identification, evaluation, and testing that will lead to remediation wherever it is deemed necessary. The process will be consistent with NJDEP regulations and will also use the advice provided by the U.S. National Research Council (NRC) in its recent report *Contaminants in the Subsurface: Source Zone Assessment and Remediation*. The processes are fundamentally consistent, and the NRC

provides a fundamental scientific and engineering reference point for evaluations and judgements. A variety of documents published by the Interstate Technology and Regulatory Council (ITRC) will be consulted for guidance on specific remediation technologies and performance monitoring.”

As discussed during the above referenced 4 August 2005 meeting, NJDEP is concerned that the recently published NRC document will become the sole or primary reference for long-term remediation at the Chambers Works site. Although the NJDEP might be inclined to agree with certain aspects of the NRC document, such as the need for clear definition of terms (i.e., “source zone” and achievable long-term remediation “objectives”) there is concern that references cited in the document were limited only to scientific peer-reviewed literature. The NRC decision to use only scientific peer-reviewed literature is well grounded to avoid vendor-generated material. However, it would appear that the document might be somewhat biased to groundwater cleanup difficulties/failures, rather than successful projects, since successfully remediated sites are rarely presented in scientific peer-reviewed journals. Therefore, a thorough and complete understanding of the NRC document would be required to minimize misunderstandings or misconceptions of its scope, purpose, and findings. NJDEP has not reviewed the document thoroughly, therefore it is requested that DuPont only use the document as a reference along with other appropriate resources.

*DuPont Response to Comment 4:*

DuPont agrees with the NJDEP request. As a follow-up to the August 4 meeting, DuPont understands the Department has approved a number of successful source zone remediation applications. It would be helpful if the Department could identify the specific projects so that they may be reviewed for potential applicability at Chambers Works.

**NJDEP and USEPA Comment 5:**

The NJDEP, USEPA and DuPont need to come up with a clear definition of a source to ground water contamination which may be above or below the water table.

*DuPont Response to Comment 5:*

As a starting point, DuPont offers the definition provided in the U.S. National Research Council (NRC) in its recent report *Contaminants in the Subsurface: Source Zone Assessment and Remediation*. This definition, which encompasses additional exposure pathways, follows.

“A source zone is a saturated or unsaturated subsurface zone containing hazardous substances, pollutants or contaminants that acts as a reservoir that sustains a contaminant plume in groundwater, surface water, or air, or acts as a source for direct exposure. This volume is or has been in contact with separate phase contaminant (NAPL or solid). Source zone mass can include sorbed and aqueous-phase contaminants as well as contamination that exists as a solid or NAPL.”

**NJDEP and USEPA Comment 6:**

During the PA/SI process if a major source is identified which could impact ground water, it should be dealt with as an IRM as has been done with the SWMUs. One of the NJDEP's goals is to see an improvement in ground water quality.

*DuPont Response to Comment 6:*

Consistent with our past practices, DuPont agrees that interim remedial measures (IRMs) in specific areas may be necessary based on findings from the preliminary investigation/site assessment (PA/SI) process.

**NJDEP and USEPA Comment 7:**

Attachment 1 (Project Details: DuPont Chambers Works Site-wide Remedial Strategy), Pages 1 and 2, (3<sup>rd</sup>, 4<sup>th</sup>, 5<sup>th</sup>, and 6<sup>th</sup> bullets). Proposed short-term remediation included a task entitled "B Aquifer Groundwater Discharge to the Delaware River." It was stated, "In an effort to confirm the conclusions of the model, DuPont proposes to conduct additional groundwater investigation in the southwest area of the site. A series of studies of the groundwater-surface water system will be performed. Due to the complexities of the groundwater and surface water interactions and the background conditions in the river, DuPont will closely coordinate this work with the Department."

Since the "A" Aquifer was not discussed, clarification is required regarding additional investigation of the "A" Aquifer, particularly along the Delaware River and its tributaries. This issue will require further discussion between DuPont, NJDEP, and USEPA.

*DuPont Response to Comment 7:*

DuPont will include an evaluation of A zone interaction with the Delaware River as part of the Ground Water to Surface Water Model Confirmation project proposed in the July 1 submittal. The work plan for this project is currently scheduled to be submitted in mid-December.

The first priority will be the evaluation of the A zone adjacent to the Delaware River. It should be noted that the majority of the A zone is physically separated from the Delaware River by a bulkhead/sea wall along the Chambers Works Complex and it generally consists of fill material on top of the pre-development ground surface. As such the proposed action will include physical inspection of the Delaware River shore line. Additionally, through the RFI process, the A zone has been evaluated as part of individual SWMU investigations as well as during the recent Baseline Ecological Evaluation.

Evaluation of the A Zone will also be included in the Long-term Site Remediation activities. Specific investigation objectives will be developed following the construction of the Integrated Site Conceptual Model. DuPont fully intends to work closely with the NJDEP and USEPA to develop the site-wide plan.

**NJDEP and USEPA Comment 8:**

Attachment 1 (Source Identification and Reduction, Removal, or Treatment), page 5, (1<sup>st</sup> bullet). It was stated, "The technical presentations will be developed in lieu of a remedial investigation report so that investigations may proceed without the typical report development and review cycle." Although, the regulatory agencies would agree that an iterative approach for the Investigation Work Plan Development phase of this site might be appropriate, DuPont should be cognizant that letter reports (at a minimum) would be required for NJDEP review.

*DuPont Response to Comment 8:*

DuPont acknowledges that written reports will be required.

**NJDEP and USEPA Comment 9:**

Attachment 1 (Remedial Action Selection), page 5, (5<sup>th</sup> bullet) and Attachment 2 (Schedule).

The proposed schedule (presented as Attachment 2) has remedial action selection of individual source zones starting on 30 November 2009. As previously discussed with DuPont, NJDEP request that DuPont conduct investigation and remedial actions (e.g., pilot testing) simultaneously, where feasible and practicable, to reduce the proposed schedule timeline.

*DuPont Response to Comment 9:*

DuPont agrees. As depicted in the sitewide strategy schedule, DuPont anticipates simultaneous execution of various projects across the site. This strategy was developed to compress the remedial action timeline to the greatest extent practicable. DuPont believes that the periodic review and update of the sitewide schedule will provide an opportunity to identify any other synergies that may reduce the overall schedule.

If you have any questions or want to discuss further any aspect of the report, please call me at 302-892-0647.

Very truly yours,



Albert J. Boettler  
Senior Environmental Consultant  
Corporate Remediation – NJ

cc: Barry Tornick, USEPA Region II  
Andy Park, USEPA Region II  
Tom Ei, bookmark Project Database  
CW Team, bookmark Projects Database  
CRG File and CRG Projects Database